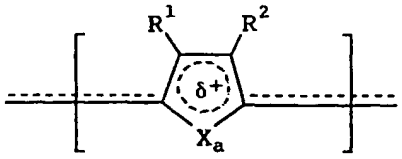
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claim 1. (currently amended): A solid electrolytic capacitor comprising an oxide dielectric film having provided thereon an electrically conducting polymer composition layer, which is produced by covering a valve-acting metal anode foil having formed on the surface thereof an oxide dielectric film with repeating sequence of a solution containing a monomer of an electrically conducting polymer and a solution containing an oxidizing agent and then polymerizing to form an electrically conducting polymer composition film on the dielectric film, wherein the solution containing a monomer of an electrically conducting polymer and/or the solution containing an oxidizing agent has a viscosity of less than 100 cp at 23°C,

wherein the electrically conducting polymer in said composition contains as a repeating chemical structure a structureal unit represented by the following formula (1a):

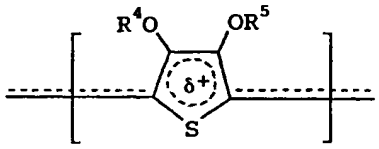


(1a)

wherein the substituents R^1 and R^2 each independently represents a monovalent group selected from the group consisting of a hydrogen atom, a linear or branched, saturated or unsaturated hydrocarbon group having from 1 to 6 carbon atoms, a linear or branched, saturated or unsaturated alkoxy group having from 1 to 6 carbon atoms, a hydroxyl group, a halogen atom, a

nitro group, a cyano group, a trifluoromethyl group, a phenyl group and a substituted phenyl group; R^1 and R^2 may combine with each other at an arbitrary position to form at least one divalent chain for forming at least one 5-, 6- or 7- membered saturated or unsaturated ring structure; X_a represents a hetero atom selected from the group consisting of S, O, Se and Te; the alkyl group and the alkoxy group represented by R^1 or R^2 each may optionally contain in the chain thereof a carbonyl bond, an ether bond, an ester bond, an amide bond or an imino bond; and δ represents a number of from 0 to 1; and wherein the electroconducting polymer is formed by setting the humidity in the atmosphere of the polymerization process to from 10% to less than 60%.

Claim 2. (previously presented): The solid electrolytic capacitor as claimed in claim 1, wherein the structural unit represented by formula (1a) is a chemical structure represented by the following formula (2):



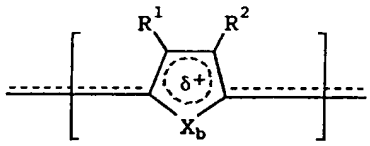
(2)

wherein the substituents R^4 and R^5 each independently represents a hydrogen atom, a linear or branched, saturated or unsaturated hydrocarbon group having from 1 to 6 carbon atoms, or a substitutent for forming at least one 5-, 6- or 7-membered saturated or unsaturated ring structure containing the two oxygen atoms shown in the formula (2) by combining hydrocarbon groups having from 1 to 6 carbon atoms to each other at an arbitrary position; the ring structure formed

as described above includes a chemical structure selected from the group consisting of a substituted vinylene group and a substituted o-phenylene group; and δ represents a number of from 0 to 1.

Claim 3. (canceled).

Claim 4. (currently amended): A solid electrolytic capacitor comprising an electroconducting polymer composition layer provided on ~~the~~ an oxide dielectric film ~~according to the method of claim 3~~, wherein the electroconducting polymer in said composition contains a structural unit represented by the following formula (1b) as a repeating chemical structure:



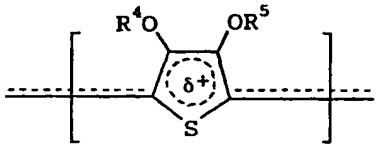
(1b)

wherein the substituents R^1 and R^2 each independently represents a monovalent group selected from the group consisting of a hydrogen atom, a linear or branched, saturated or unsaturated hydrocarbon group having from 1 to 6 carbon atoms, a linear or branched, saturated or unsaturated alkoxy group having from 1 to 6 carbon atoms, a hydroxyl group, a halogen atom, a nitro group, a cyano group, a linear or branched perfluoroalkyl group having from 1 to 6 carbon atoms, a phenyl group and a substituted phenyl group; said substituents R^1 and R^2 may be combined with each other at an arbitrary position to form at least one divalent chain for forming at least one 5-, 6- or 7-membered saturated or unsaturated ring structure; X_b represents a hetero atom selected from the group consisting of S, O, Se, Te and NR^3; R^3 represents a hydrogen atom, a linear or branched, saturated or unsaturated hydrocarbon group having from 1 to 6 carbon

atoms, a phenyl group, or a linear or branched, saturated or unsaturated alkoxy group having from 1 to 6 carbon atoms; and the alkyl group and the alkoxy group represented by R^1, R^2 or R^3 each may optionally contain in the chain thereof a carbonyl bond, an ether bond, an ester bond, an amide bond or an imino bond; and δ is a number of from 0 to 1; and

wherein the electroconducting polymer composition layer is produced by coating a solution containing a monomer of the electroconducting polymer and a solution containing an oxidizing agent in repeating sequence on a valve-acting metal anode having formed on the surface thereof an oxide dielectric film, and then polymerizing wherein the electroconducting polymer is formed by setting the humidity in the atmosphere of the polymerization process to from 10% to less than 60%.

Claim 5. (original): The solid electrolytic capacitor as claimed in claim 4, wherein the structural unit represented by formula (1b) is a chemical structure represented by the following formula (2):

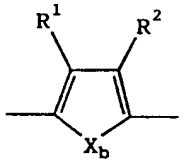


(2)

wherein the substituents R^4 and R^5 each independently represents a hydrogen atom, a linear or branched, saturated or unsaturated hydrocarbon group having from 1 to 6 carbon atoms or a substituent of forming at least one 5-, 6- or 7-membered saturated or unsaturated ring structure containing the two oxygen atoms shown in the formula when the hydrocarbon groups having from 1 to 6 carbon atoms are combined with each other at an arbitrary position, the ring structure

formed including a chemical structure selected form the group consisting of a substituted vinylene group and a substituted o-phenylene group, and δ represents a number of from 0 to 1.

Claim 6. (withdrawn-currently amended): The ~~method for producing a~~ solid electrolytic capacitor as claimed in claim ~~3~~4, ~~said solid electrolytic capacitor comprising an electroconducting polymer composition layer provided on the oxide dielectric film, wherein a monomer is polymerized on the oxide dielectric film by an oxidizing agent,~~ wherein the monomer is a compound represented by the following formula (3b):

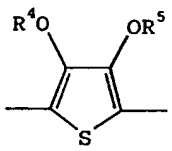


(3b)

wherein the substituents R^1 and R^2 each independently represents a monovalent group selected from the group consisting of a hydrogen atom, a linear or branched, saturated or unsaturated hydrocarbon group having from 1 to 6 carbon atoms, a linear or branched, saturated or unsaturated alkoxy group having from 1 to 6 carbon atoms, a hydroxyl group, a halogen atom, a nitro group, a cyano group, a linear or branched perfluoroalkyl group having from 1 to 6 carbon atoms, a phenyl group and a substituted phenyl group; said substituents R^1 and R^2 may be combined with each other at an arbitrary position to form at least one divalent chain for forming at least one 5-, 6- or 7-membered saturated or unsaturated ring structure; X_b represents a hetero atom selected from the group consisting of S, O, Se, Te and NR^3; R^3 represents a hydrogen atom, a linear or branched, saturated or unsaturated hydrocarbon group having from 1 to 6 carbon atoms, a phenyl group, or a linear or branched, saturated or unsaturated alkoxy group having

from 1 to 6 carbon atoms; and the alkyl group and the alkoxy group represented by R^1, R^2 or R^3 each may optionally contain in the chain thereof a carbonyl bond, an ether bond, an ester bond, an amide bond or an imino bond; and the polymerization is performed in the presence of a compound capable of providing an anion of an organic sulfonic acid or sulfonate anion having a doping ability.

Claim 7. (withdrawn-currently amended): The ~~method for producing a~~ solid electrolytic capacitor as claimed in claim 6, wherein the monomer represented by formula ~~(1b)~~(3b) is a compound represented by the following formula (4):



(4)

wherein the substituents R^4 and R^5 each independently represents a hydrogen atom, a linear or branched, saturated or unsaturated hydrocarbon group having from 1 to 6 carbon atoms or a substituent of forming at least one 5-, 6- or 7-membered saturated or unsaturated ring structure containing the two oxygen atoms shown in the formula when the hydrocarbon groups having from 1 to 6 carbon atoms are combined with each other at an arbitrary position, the ring structure formed including a chemical structure selected form the group consisting of a substituted vinylene group and a substituted o-phenylene group~~, and δ represents a number of from 0 to 1~~.

Claim 8. (withdrawn-currently amended): The ~~method for producing a~~ solid electrolytic capacitor as claimed in claim ~~3,~~ 6 or 7, wherein said oxidizing agent is a metal salt or ammonium salt of an oxidative inorganic acid.

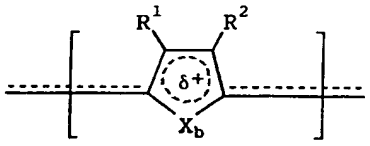
Claim 9. (withdrawn-currently amended): The ~~method for producing a~~ solid electrolytic capacitor as claimed in claim 8, wherein said metal salt or ammonium salt of an oxidative inorganic acid is persulfate.

Claim 10. (canceled):

Claim 11. (withdrawn-currently amended): The ~~method for producing a~~ solid electrolytic capacitor as claimed in claim 7~~10~~, wherein said ~~thiophene derivative~~monomer is 3, 4-ethylenedioxythiophene.

Claim 12. (currently amended): A solid electrolytic capacitor comprising an oxide dielectric film having provided thereon an electrically conducting polymer composition layer, which is produced by covering a valve-acting metal anode foil having formed on the surface thereof an oxide dielectric film with repeating sequence of a solution containing a monomer of an electrically conducting polymer and a solution containing an oxidizing agent and then polymerizing to form an electrically conducting polymer composition film on the dielectric film, wherein the solution containing a monomer of an electrically conducting polymer and/or the solution containing an oxidizing agent has a viscosity of less than 100 cp at 23°C,

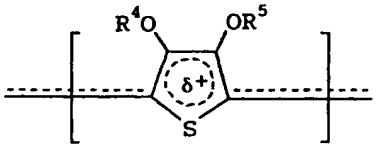
wherein the electrically conducting polymer in said composition contains as a repeating chemical structure a structureal unit represented by the following formula (1b):



(1b)

wherein the substituents R^1 and R^2 each independently represents a monovalent group selected from the group consisting of a hydrogen atom, a linear or branched, saturated or unsaturated hydrocarbon group having from 1 to 6 carbon atoms, a linear or branched, saturated or unsaturated alkoxy group having from 1 to 6 carbon atoms, a hydroxyl group, a halogen atom, a nitro group, a cyano group, a linear or branched perfluoroalkyl group having from 1 to 6 carbon atoms, a phenyl group and a substituted phenyl group; said substituents R^1 and R^2 may be combined with each other at an arbitrary position to form at least one divalent chain for forming at least one 5-, 6- or 7-membered saturated or unsaturated ring structure; X_b represents a hetero atom selected from the group consisting of S, O, Se, Te and NR^3; R^3 represents a hydrogen atom, a linear or branched, saturated or unsaturated hydrocarbon group having from 1 to 6 carbon atoms, a phenyl group, or a linear or branched, saturated or unsaturated alkoxy group having from 1 to 6 carbon atoms; and the alkyl group and the alkoxy group represented by R^1, R^2 or R^3 each may optionally contain in the chain thereof a carbonyl bond, an ether bond, an ester bond, an amide bond or an imino bond; and δ is a number of from 0 to 1; and wherein the electroconducting polymer is formed by setting the humidity in the atmosphere of the polymerization process to from 10% to less than 60%.

Claim 13. (previously presented): The solid electrolytic capacitor as claimed in claim 12, wherein the structural unit represented by formula (1b) is a chemical structure represented by the following formula (2):



(2)

wherein the substituents R^4 and R^5 each independently represents a hydrogen atom, a linear or branched, saturated or unsaturated hydrocarbon group having from 1 to 6 carbon atoms or a substituent of forming at least one 5-, 6- or 7-membered saturated or unsaturated ring structure containing the two oxygen atoms shown in the formula when the hydrocarbon groups having from 1 to 6 carbon atoms are combined with each other at an arbitrary position, the ring structure formed including a chemical structure selected form the group consisting of a substituted vinylene group and a substituted o-phenylene group, and δ represents a number of from 0 to 1.

Claim 14. (withdrawn): A method for producing a solid electrolyte capacitor comprising coating a solution containing a monomer of an electroconducting polymer and a solution containing an oxidizing agent in repeating sequence on a valve-acting metal anode having formed on the surface thereof an oxide dielectric film, and then polymerizing wherein the electroconducting polymer contains as a repeating chemical structure a structureal unit represented by formula (1b) of claim 12.

Claim 15. (withdrawn): A method for producing a solid electrolyte capacitor comprising coating a solution containing a monomer of an electroconducting polymer and a solution containing an oxidizing agent in repeating sequence on a valve-acting metal anode having formed on the surface thereof an oxide dielectric film, and then polymerizing wherein the

electroconducting polymer contains as a repeating chemical structure a structureal unit represented by formula (2) of claim 13.